Louisiana's Fluoridation Program

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Office of Public Health
Oral Health Program

Who are we?

- The community water fluoridation program is executed by the state Oral Health Program.
- We are under DHH/Office of Public Health/Center for Preventive Health.
- We have been awarded a Centers for Disease Control (CDC) grant for state-based oral disease prevention.
- Fluoridation Community Coordinator
  Karissa M. Page, MPH

What's fluoridation?

- Fluoridation is the adjustment of naturally occurring fluoride in our drinking water to the optimal level that has been determined to have maximum oral health benefits.
- The optimal level of fluoride for our state is .8 ppm as determined by over 60 years of scientific study.

What's fluoride?

- Fluoride is an ion of the element fluorine, a close relative of chlorine.
- It makes up around 15% of the earth's crust.
- It occurs naturally in the ocean, surface water and ground water.
- The amount that naturally occurs in water can vary.

What's true about fluoride?

- At optimal level fluoride in drinking water will reduce caries (tooth decay) by 20% to 40%.
- At over 2.0 ppm a condition called dental fluorosis can begin to occur in some people. It is the discoloration or mottling of the teeth.
- At very high levels of intake over a long period of time skeletal fluorosis can occur. At extreme levels of ingestion death can occur.

What else is true?

- Fluoride is **not** medicine.
- It's **not** toxic waste.
- Fluoride at optimal levels **has not been shown** to cause cancer, a reduction in I.Q., birth defects, autism, obesity, mind control…or any negative health effects.

How does fluoride work?

- Fluoride works as teeth are forming in child hood and also after teeth are already formed.
  - Fluoride benefits children and adults
  - As teeth are forming fluoride is incorporated in the tooth enamel (the outer layer) which strengthens the tooth against tooth decay.
  - After teeth stop growing fluoride inhibits the formation of acids in the mouth that cause tooth decay. This allows remineralization to occur. Fluoride becomes part of the enamel during this process.

How do we add fluoride?

- Select a suitable chemical to provide the fluoride ion.
- Measure the water flow rate.
- Determine the natural level of fluoride in the water we are going to fluoridate.
- Calculate the amount of chemical that needs to be added.
- Design the system based on the chemical.

What chemicals are used?

- Sodium fluorosilicate (dry powder) $Na_2Si\ F_6$
- Sodium fluoride (dry crystal) NaF
- Fluorosilicic Acid (liquid) H_2SiF_6 (FSA)
- These are the only chemicals approved by the state for water fluoridation.
- They must conform to the applicable AWWA standard and ANSI/NSF Standard 60.

How are the chemicals added?

- There are two types of systems;
  - Liquid systems, where the chemicals are added in liquid form.
  - Dry systems, where the chemicals are added as a solid.

What equipment is used?

- Liquid systems use either:
  - Sodium Fluoride
    - It must first be dissolved in water.
  - Fluorosilicic Acid
- Water Meter
- Bulk chemical storage
- Day tank (FSA)
- Saturator (NaF)
- Metering pump
- Antisiphon valves
- Corporation stop valve/injection lance

Why go to the trouble?

- Dental decay is the # 1 chronic disease affecting people of all ages.
  - Dental decay is entirely preventable.
- The average annual cost for fluoridation is only $1.78 per person .
- Each $1 spent saves $38 in future dental treatment costs.

What's changed lately?

- ACT 761 was signed into law in July, 2008.
  - Mandates that PWS with over 5000 service connections fluoridate their water.
  - Uses state-provided funds to pay for initial start up, and first 6 months of chemicals.
- PWS that wish to be exempt are required to file a petition with the signatures of 15% of the registered voters calling for a referendum. A majority of voters must vote to not fluoridate.

Why now?

- Nationally the CDC is providing financial help:
  - Healthy People 2010 Goal for US is to have 75% of the country's population receiving optimally fluoridated water
  - Currently in the US, approximately 69.2% of the population is fluoridated
- In Louisiana, **not even 45%** of the state's population receives optimally fluoridated water

When will this happen?

- It is happening now.
- Act 761 affects 25 PWS
  - PWS have been notified and have submitted cost estimates.
- Funding discussions are under way with several systems.
- LAC Title 48, Part V is currently being rewritten.
- Fluoridation Operator Training is scheduled to start in the 3rd or 4th quarter.
- Long term schedule will be determined by fund availability.

Questions ?

- Contact Information
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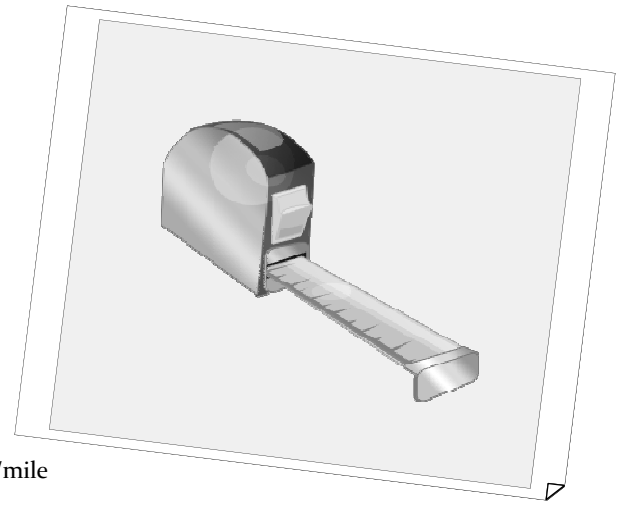
Just for an exercise…

How small is 1 ppm?

How long is a
2010 Ford F150?

211.1 inches

How many inches are in a mile?



5280

x 12 =

63,360 inches/mile

How long is Interstate 10? In miles? In inches?

2,460.34 miles
X 63,360 =

155,887,142 inches

Bumper to bumper, single file, how many new F150s' would fit on I-10?

155,887,142/
211.1 =
738,452 Pickups

1/738,452 is 1.354 ppm

About 75% of 1 pickup
is equivalent to 1 ppm!

Thank you!